

NAME: Afnan Ur Rehman

STUDENT ID: 21324930

ENGR6005 New Product Development

Assignment 1 Part 2

SECTION 1: Summary of Product Innovation

Dental health Monitoring device, a teeth health detection mechanism which enables the user to track the general health of teeth and gum. The User can put the new product in between their jaws, where the device would cover the teeth as well as gum. Using the UV light and advance low-dose miniaturized x-ray technology [1], the device would identify the calcium deficiency of teeth, highlight the weak gums, identify the plaque in teeth and any hole that could later harm the teeth and cause tooth decay. A detailed report could be seen on the mobile based app [2], however the device itself would have integrated display showing immediate results, such as calcium levels and risk level of teeth and gums. Based on those levels, the person can decide to go to dentist and get an appointment for dental check-up, and get that issue resolved before that issue has even begin.

Lean Canvas DRAFT		Designed for:		Designed by:		Date:		Version:	
		ENGR6005 1-2		Afnan Ur Rehman		15/04/2024		1	
Problem <div>1. Traditional ways, lack of efficient ways of detecting the dental health without visiting a dentist.</div> <div>2. Most of the time, it leads to late detection of cavities and gum disease.</div> <div>3. By the time the issue is recognized, it's already very late for the dentist to save the teeth.</div> <div>4. There is no device that could detect the calcium deficiency of the teeth.</div>		Solution <div>1. Detects the calcium deficiency of teeth and general health of gum using the UV light.</div> <div>2. Detects plaque and hole in the teeth and gum.</div> <div>3. Gives a detailed report on mobile-based app with practical solutions based on the risk level.</div>		Unique Value Proposition <div>“Dental health Monitoring device is the only device which helps the user detect the calcium deficiency of the teeth and identify the dental issues at home without paying a visit to the dentist”</div>		Unfair Advantage <div>The device uses UV light and advanced low-dose miniaturized x-ray technology, the first of its kind for the home-based usage.</div>		Customer Segments <div>1. The target customers are parents who find it hard to take their kids to a dentist.</div> <div>2. Office going individuals who finds it hard to take time out of their busy schedule to pay a visit to the dentist for regular checkup.</div>	
Existing Alternatives <div>The only way to identify the dental issues is by visiting a dentist or getting a blood test to identify the calcium level of whole body but there is no product specifically designed to identify the calcium deficiency of teeth.</div>		Key Metrics <div>1. Number of units sold.</div> <div>2. Number of partnerships with the dentists.</div> <div>3. Increase in active customer base.</div> <div>4. Geographical locality where the product is most famous.</div>		High-Level Concept <div>Dental health Monitoring device = Fitbit for teeth</div>		Channels <div>1. Online sales comprising of the integration between Shopify and FB.</div> <div>2. Marketing campaign on Instagram.</div> <div>3. Trade marketing on dentist clinics and shopping malls.</div>		Early Adopters <div>1. Busy Professionals</div> <div>2. Health-Conscious Individuals</div> <div>3. Professional Parents with kids.</div> <div>4. People with bad dental experiences.</div>	
Cost Structure <div>Hosting</div> <div>Web Development & maintenance</div> <div>Digital Marketing Team Payroll</div> <div>Operational Cost (Rent, facilities, Delivery)</div>				Revenue Structure <div>Distributor Investment</div> <div>Go Fund me</div> <div>Direct Sales</div> <div>Revenue</div> <div>Gross Margin</div>					

Section 3 Customer Segments

The target customers for this innovative product are the individuals who are conscious about their dental health and seek solutions for maintaining and monitoring the oral hygiene. The products specifically target the parents who find it hard to take their kids to a dentist for regular checkups because their kids fear going to a dentist. The product also targets the individuals who have a busy schedule and find it hard to take time out of their busy schedules to book an appointment with a dentist and pay a visit to the clinic just to go for regular checkup.

The unique proposition of this product is its ability to identify the calcium deficiency of teeth and gum along with the plaque buildup which would help the user with taking the early action on the issues. The primary problem most of the targeted customers face is the lack of any proactive solution for monitoring the calcium deficiency level along the dental health without paying a visit to the dentist. Most of the time, the traditional dental checkups miss the early detection of the dental issues or by the time the patient visits the dentist, it is already very late for any sort of treatment. Furthermore, user doesn't pay heed to the issue until that issue becomes out of control and it is the reason why most of the people end up losing their teeth. This innovative product provides real time data on calcium level, plaque accumulations and cavities in the teeth and gum, allowing user to identify problems early and take preventive measures. The product allows the users to monitor dental health at home reducing the need for the frequent visit of the dental clinic.

The customers and user would be the same people in most cases. However, along with the use of digital marketing to sale this innovative product, the product would be marketed through dental clinics as well using the trade marketing strategies, giving trade discounts and profit margins to the dental clinics and pharmacies. But the end user would be the actual customer or first buyer of the product which in our case would be most likely the parents and busy professionals who finds it difficult to take time out of the busy schedules to pay a visit to a dentist just to get a regular checkup or they need to get the medical blood test to identify the calcium deficiency in the teeth and bones.

Section 4: Customer Research Interview

Date: Thursday, 18th April, 2024

Time: 10:30 pm

URL LINK to video/audio recording (save as “unlisted” in YouTube): https://youtu.be/9y_29v7gb10

Person Interviewed:

Name: Mr. Kaleem ul Hassan

Email: kaleemulhassan@gmail.com

Relevance to the Problem

Kaleem ul Hassan is an individual with sound knowledge of technology and product development along with the safety procedures for the processes. Although, Mr Kaleem pays a visit to his dentist once a year for routine checkup. However, Mr Kaleem ul Hassan had a recent experience of going to a dentist because of a toothache, for which he got an appointment after a week. By the time Mr Kaleem visited the clinic, his gum caught an infection because of the cavity and the dentist had to remove the teeth from its root.

Brief Background, Experience, Profession

- Mr. Kaleem ul Hassan, an environmental engineer currently working in the Health and Safety department at BHP.
- Mr Kaleem ul Hassan completed his Bachelor of Environmental Engineering from University of Canberra.
- A 30-Year-old individual with industry Knowledge of engineering process and procedures.
- A potential customer.

Section 5: Customer Insights

Mr. Kaleem ul Hassan was selected for the interview who represents the public with a professional job and busy schedule. The potential customer shed lights on the issues like long wait times for the appointments in the dental clinics. Furthermore, the customer faced a problem where he didn't pay heed to the dental issue, which resulted in him losing a tooth. The potential customer appreciated the idea of dental Monitoring device, however, as a potential customer and a Health & Safety Officer, he had some insights on the usage of UV rays and low dosed miniaturized x-ray at home.

The customer had a view that if this technology is to be used in home-based environments, it needs to be made sure that the emitted radiations are very low dosed on pallet level and controlled. He gave us some insights through which the customer thinks the product could use these technologies without harming the health of users. Overall, the potential customer gave very positive insights and was willing to pay and recommend it to his family and friends after using the product himself.

The customer highlighted the importance and effectiveness of this device where the people are not able to take time out of their busy schedules and visit a dentist. Therefore, neglecting the routine checkups. The potential customer also highlighted, how it's impossible to get the calcium levels checked without getting the blood test, which he mentioned as a "hectic process". The customer was appreciative of the product ability to highlight the calcium deficiency within the teeth and see the detailed report in the app.

Lastly, the potential customer also suggested that the product has a good scope and could be marketed through the digital marketing campaign along with some awareness campaigns in front of pharmacies and in shopping malls.

Lean Canvas FINAL		Designed for: ENGR6005 1-2	Designed by: Afnan Ur Rehman	Date: 19-04-2024	Version: 2
Problem 1. Long wait time in getting appointment with the dentist. 2. Neglecting the oral hygiene and dental health due to busy schedules. 3. No way to diagnose calcium deficiency and early dental issues without visiting a dentist.	Solution 1. The innovative product detects the calcium deficiency of teeth and general health of gum using the UV light without giving any blood test. 2. Detects plaque and hole in the teeth and gum without visiting any dentist. 3. Gives a detailed report on mobile-based app with viable solutions based on the risk level.	Unique Value Proposition “Dental health Monitoring device, the only device which helps the user detect the calcium deficiency of the teeth and identify the dental issues at home without paying a visit to the dentist”	Unfair Advantage 1. The ability to detect calcium deficiency using UV light and low-dosed miniaturized x-ray technology. 2. The user can identify the dental issue without the need to visit a dentist	Customer Segments 1. Busy Professionals 2. Health-Conscious Individuals 3. Professional Parents with kids. 4. People with bad dental experiences.	
Existing Alternatives 1. The only way to get the dental checkup is by going to a dentist. 2. The only way to check the calcium deficiency is by getting a blood test.	Key Metrics 1. Number of people buying the device from pharmacies. 2. Sales through the social media platforms, monitoring the ROI and performance of digital marketing.	High-Level Concept D-Clinic = blood test for medical	Channels 1. Online sales comprising of the integration between Shopify and FB. 2. Marketing campaign on Instagram. 3. Trade marketing on dentist clinics and shopping malls.	Early Adopters List the characteristics of your ideal customers. 1. Are professionals with full time jobs and busy schedules. 2. People who care about dental health and are fed-up with the long wait times or had a bad dental experience.	
Cost Structure Hosting Web Development & maintenance Digital Marketing Team Payroll Facebook and Instagram Marketing Ads Operational Cost (Rent, facilities, Delivery)			Revenue Structure Distributor Investment Go Fund me Direct Sales		

REFERENCES

- [1] A. R. Mistry, D. Uzbelger Feldman, J. Yang, and E. Ryterski, "Low dose x-ray sources and high quantum efficiency sensors: the next challenge in dental digital imaging?," *Radiology Research and Practice*, vol. 2014, 2014.
- [2] J. Xiao *et al.*, "Assessing a smartphone app (AICaries) that uses artificial intelligence to detect dental caries in children and provides interactive oral health education: Protocol for a design and usability testing study," *JMIR research protocols*, vol. 10, no. 10, p. e32921, 2021.